

In the Specification

Please amend the specification by replacing the paragraph at page 7 spanning lines 5 to 16 with the following amended paragraph.

At the distal end of the shaft assembly 12 is a balloon assembly 14. The balloon assembly 14 includes an expandable balloon 28 having a proximal balloon waist 30 and a distal balloon waist 32. The proximal balloon waist 30 affixes the expandable balloon 28 to the outer tubular member 26 near its distal end by means of an adhesive, or alternatively, or in combination with, RF, laser or other thermal bonding. The distal balloon waist 32, as shown best in Figure 2, similarly affixes the expandable balloon 28 to the inner tubular member 22 near its distal end by means of an adhesive bond and/or an RF, laser or other thermal bond. This particular balloon assembly 14 arrangement allows the expandable balloon 28 to be in fluid communication with the annular inflation lumen defined between the outer tubular member 26 and the inner tubular member 22. In preferred embodiments, a portion of the inner tubular member 22 extends distally beyond the distal balloon waist 32 ~~34~~.

Please replace the paragraph beginning at line 9 of page 3 as follows:

The present invention maximizes the benefits of a tie layer in a balloon catheter by utilizing only a ~~discreet~~ discrete length of tie layer where needed on the catheter. In particular to the present invention, a ~~discreet~~ discrete length tie layer is disclosed to aid in bond formation between an expandable balloon and a distal portion of a catheter shaft. However, the ~~discreet~~ discrete tie layer can be utilized at any bond on the catheter shaft where improved bonding is needed. The tie layer disclosed in the present invention can be a single layer applied directly to the structural surfaces, or alternatively, the tie layer may be incorporated into a preformed polymeric insert. In the latter embodiment, the polymeric insert may include several layers of polymeric material, each acting as or including the tie layer.

Please replace the paragraph beginning at line 1 of page 11 as follows:

a³ Although the difficulty in bonding the distal balloon waist 32 to the inner tubular member 22 has been highlighted, other bonding areas along the catheter may be aided through tie layers. For example, a segment of tie layer may be placed between the proximal balloon waist 30 and the outer tubular member 26 to aid in bonding the expandable balloon 28 to the catheter shaft 12. As with the bonding between the distal balloon waist 32 and the inner tubular member 22, there may exist some bonding incompatibility between the materials comprising the proximal balloon waist 30 and the outer tubular member 26. A ~~discreet~~ discrete section of tie layer material positioned between these two structural components may alleviate these bonding difficulties. Thus, the following sections discuss the bonding incompatibility between the distal balloon waist 32 and the inner tubular member 22 for illustrative purposes only, as other portions experiencing bonding difficulties may also be treated with the specific and precise placement of a tie layer.

Please replace the paragraph beginning at line 16 of page 12 as follows:

a⁴ Manufacturing a catheter distal tip in accordance with the present invention begins by first inserting a mandrel (not shown) into the distal end of the inner tubular member 22. The insertion of the mandrel insures against deformation of the catheter tip during the subsequent thermal processing events. Once the mandrel is inserted, the tie layers, preferably preformed as an insert, are disposed between the inner tubular member 22 and the distal balloon waist 32. In one embodiment, each tie layer is disposed over the inner tubular member 22, or

ad alternatively, upon a preceding tie layer. The properly positioned tie layer is then thermally processed individually. In preferred embodiments, the tie layer insert is substantially the same length as the distal waist of the balloon, although it can be slightly longer or shorter and still provide adequate bonding. The short segment tie layer ~~disereet~~ discrete to the balloon waist area provides a distinct advantage over the user of a tie layer over a greater length of the shaft in that the tie layer affects stiffness of the area in which it is used.
